IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A method comprising:

reading a design description for a heterogeneous reconfigurable device that includes a plurality of programmable elements with different underlying architectures, wherein a first type of the plurality of programmable elements is capable of executing instructions, and a second type of the plurality of programmable elements is capable of different configurations to implement logic, the design description including a plurality of functions to map to the plurality of programmable elements;

combining the plurality of functions within the design description into groups based at least in part on possible programmable element types upon which the plurality of functions could successfully map; ~~and~~

estimating power consumption of the groups using a pre-determined database that estimates the power for each instruction or configuration, depending on the underlying architecture of a target programmable element type for each group; and

analyzing the groups for compliance with user-specified constraints, wherein the user-specified constraints include power consumption constraints.

2. (Canceled)

3. (Currently Amended) The method of claim 1 ~~wherein analyzing comprises~~ further comprising estimating area occupied by the groups.

4. (Currently Amended) The method of claim 1 further comprising re-combining the plurality of functions into groups, re-estimating power consumption, and re-analyzing the groups for compliance with the user-specified constraints.

5. (Original) The method of claim 1 wherein analyzing comprises comparing estimated parameters with prioritized user-specified constraints.

6. (Original) The method of claim 1 further comprising compiling the functions to run on processing elements within the heterogeneous reconfigurable device.

7. (Original) The method of claim 6 further comprising placement of the groups onto particular processing elements within the heterogeneous reconfigurable device.

8. (Original) The method of claim 7 further comprising analyzing the placement for compliance with user-specified constraints.

9. (Currently Amended) The method of claim 8 ~~wherein analyzing the placement comprises~~ further comprising estimating latency.

10. (Original) The method of claim 9 wherein estimating latency comprises estimating interconnect delay.

11. (Original) The method of claim 9 wherein estimating latency comprises estimating processing latency.

12. (Original) The method of claim 9 wherein estimating latency further comprises estimating processing latency and interconnect latency.

13. (Original) The method of claim 7 further comprising producing a file with a placed design for profiling.

14. (Original) The method of claim 13 further comprising profiling the design and comparing with user-specified constraints.

15. (Currently Amended) The method of claim 14 further comprising re-grouping the plurality of functions in response to the profiling.

16. (Original) The method of claim 14 further comprising re-performing placement in response to the profiling.

17. (Currently Amended) A method comprising:

mapping a plurality of functions into groups;

placing the groups on resources within a heterogeneous reconfigurable device; the resources including a plurality of programmable elements with different underlying architectures, wherein a first type of the plurality of programmable elements is capable of executing instructions, and a second type of the plurality of programmable elements is capable of different configurations to implement logic;

estimating power consumption of the groups using a pre-determined database that estimates the power for each instruction or configuration, depending on the underlying architecture of a target programmable element type for each group;

analyzing the groups for compliance with user-specified constraints, wherein the user-specified constraints include power consumption constraints;

producing a mapped and placed design representation;

profiling the design representation; and

comparing results from the profiling with the user-specified constraints.

18. (Original) The method of claim 17 further comprising re-mapping the plurality of functions into groups.

19. (Original) The method of claim 17 further comprising re-placing the groups on resources.

20. (Original) The method of claim 17 wherein comparing results comprises comparing an estimated latency with a latency specified in the user-specified constraints.

21. (Original) The method of claim 20 wherein the estimated latency includes processing latency and interconnect latency.

22. (Original) The method of claim 17 wherein the user-specified constraints include latency, power, and throughput.

23. (Currently Amended) An apparatus including a medium to hold machine-accessible instructions that when accessed result in a machine performing:

reading a design description for a heterogeneous reconfigurable device that includes a plurality of programmable elements with different underlying architectures, wherein a first type of the plurality of programmable elements is capable of executing instructions, and a second type of the plurality of programmable elements is capable of different configurations to implement logic, the design description including a plurality of functions to map to the plurality of programmable elements;

combining the plurality of functions within the design description into groups based at least in part on possible programmable element types upon which the plurality of functions could successfully map; ~~and~~

estimating power consumption of the groups using a pre-determined database that estimates the power for each instruction or configuration, depending on the underlying architecture of a target programmable element type for each group; and

analyzing the groups for compliance with user-specified constraints, wherein the user-specified constraints include power consumption constraints.

24. (Currently Amended) The apparatus of claim 23 wherein the machine-accessible instructions when accessed further result in the machine performing:

re-combining the plurality of functions into groups; and

re-analyzing the groups for compliance with the user-specified constraints.

25. (Original) The apparatus of claim 23 wherein the machine-accessible instructions when accessed further result in the machine performing:

compiling the functions to run on processing elements within the heterogeneous reconfigurable device.

26. (Original) The apparatus of claim 23 wherein analyzing comprises comparing estimated parameters with prioritized user-specified constraints.

27. (Currently Amended) An electronic system comprising:

a processor; and

a static random access memory to hold instructions that when accessed result in the processor performing reading a design description for a heterogeneous reconfigurable device[[,]] that includes a plurality of programmable elements with different underlying architectures, wherein a first type of the plurality of programmable elements is capable of executing instructions, and a second type of the plurality of programmable elements is capable of different configurations to implement logic, the design description including a plurality of functions to map to the plurality of programmable elements; combining the plurality of functions within the design description into groups[[,]] based at least in part on possible programmable element types upon which the plurality of functions could successfully map; estimating power consumption of the groups using a pre-determined database that estimates the power for each instruction or configuration, depending on the underlying architecture of a target programmable element type for each group; and analyzing the groups for compliance with user-specified constraints wherein the user-specified constraints include power consumption constraints.

28. (Currently Amended) The electronic system of claim 27 wherein the instructions when accessed further result in the processor performing re-combining the plurality of functions into groups, and re-analyzing the groups for compliance with the user-specified constraints.

29. (Original) The electronic system of claim 28 wherein analyzing comprises comparing estimated parameters with prioritized user-specified constraints.